

Differential diagnosis of cardiomyopathies: Utility of cardiac magnetic resonance imaging

Kardiyomiopatilerin ayırıcı tanısı: Kardiyak manyetik rezonans görüntülemenin işlevselliği

To the Editor,

We read with great interest the article by Kurtul et al. (1) entitled "Acute coronary syndrome with intraventricular thrombus after using erythropoietin," which is published in the current issue of The Anatolian Journal of Cardiology.

These authors (1) presented a case of acute coronary syndrome (ACS) with intraventricular thrombus associated with erythropoietin (EPO). They discussed that increased erythropoietin levels and intracardiac/intracoronary thrombus might be associated with abruptly increased hematocrit values, enhanced platelet activation and endothelial stimulation, and reduced coagulation inhibitors. Some comments may be of interest.

Increased EPO dose was significantly associated with the composite endpoint of death, heart failure, stroke, or myocardial infarction and the effect of EPO on blood pressure in normal humans is independent of its effect on hematocrit. Increment in plasma noradrenaline, endothelin-1, thromboxane-B2 concentrations, reactivity to exogenous noradrenaline and platelet α_2 -adrenoceptor densities can be observed in patients using EPO (2, 3).

Takotsubo cardiomyopathy is a cause of reversible left ventricle (LV) systolic dysfunction in mid to apical segments. It presents with a myocardial infarct-like clinical syndrome and it is often preceded by emotional stress or exacerbation of an existing medical condition. LV systolic function and patients' symptoms tend to normalize approximately in a week (4).

Increment in sympathetic activity associated with high dose of erythropoietin can result in Takotsubo cardiomyopathy or coronary ischemia via vasospasm. On cardiac magnetic resonance (CMR) imaging, whereas Takotsubo cardiomyopathy is characteristic in no or minimal late gadolinium enhancement (LGE), myocardial infarction is characteristic in subendocardial LGE, which extends variably transmurally to the epicardium (4, 5).

When etiology remains unclear, CMR appears to be a useful imaging modality for documenting the extent of the regional wall motion abnormality and differentiating cardiomyopathies from each other.

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References

1. Kurtul A, Duran M, Uysal OK, Örnek E. Acute coronary syndrome with intraventricular thrombus after using erythropoietin. Anadolu Kardiyol Derg 2013; 13: 278-9.
2. Krapf R, Hulter HN. Arterial hypertension induced by erythropoietin and erythropoiesis-stimulating agents (ESA). Clin J Am Soc Nephrol 2009; 4: 470-80. [CrossRef]
3. Fritschka E, Neumayer HH, Seddighi S, Thiede HM, Distler A, Philipp T. Effect of erythropoietin on parameters of sympathetic nervous activity in

patients undergoing chronic haemodialysis. Br J Clin Pharmacol 1990; 30: 135-8. [CrossRef]

4. Quarta G, Sado DM, Moon JC. Cardiomyopathies: focus on cardiovascular magnetic resonance. Br J Radiol 2011; 84: 296-305. [CrossRef]
5. İzgi C, Mohiaddin R. Role of cardiovascular magnetic resonance in the diagnosis of arrhythmogenic right ventricular cardiomyopathy/dysplasia with left ventricular involvement. Anadolu Kardiyol Derg 2012; 12: E4-5.

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Author's Reply

To the Editor,

We reported a case report titled "Acute coronary syndrome with intraventricular thrombus after using erythropoietin" in the May 2013 issue of The Anatolian Journal of Cardiology (1). We read with interest the letter to the editor about our case report. We thank for comments and we would like to reply this important comments on our article.

We reported a case of acute coronary syndrome (ACS) with intraventricular thrombus associated with erythropoietin (EPO). We discussed that prothrombotic effect of EPO might associated with abruptly increased hematocrit values, enhanced platelet production or reactivity, stimulation of endothelial cells or reduced coagulation inhibitors (1).

We supported the underlying mechanisms about erythropoietin worse outcome which put forward by the authors such as increasing of noradrenaline, endothelin-1 and thromboxane-B2 (2, 3). As they pointed out, increment in sympathetic activity associated with high dose of erythropoietin can result in Takotsubo cardiomyopathy (TCM) or coronary ischemia via vasospasm. TCM is a rare clinical entity, having clinical and electrocardiographic findings very similar to those found in acute myocardial infarction (4). Kim et al. (4) reported a case of Takotsubo cardiomyopathy with apical thrombus as a source of cardioembolic cerebral infarction. However, Haghi et al. (5) evaluated 63 consecutive patients with TCM with intravascular ultrasound (IVUS) and they did not find intracoronary thrombus in that patients. We examined the literature and we did not find any evidence that intracoronary thrombosis in these patients.

As they pointed out cardiac magnetic resonance (CMR) may be used to imaging modality for documenting the extent of the regional wall motion abnormality and differentiating different etiologies. But unfortunately, in our case, we did not evaluate the patient with CMR.

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